

2017

Expanding the Horizon: Global Health Management for Pharmacy Students

Alice C. Chang

Purdue University, chang260@purdue.edu

Monica L. Miller

Purdue University, mille355@purdue.edu

Ellen M. Schellhase

Purdue University, elschell@purdue.edu

Follow this and additional works at: <https://docs.lib.purdue.edu/pjsl>



Part of the [Bilingual, Multilingual, and Multicultural Education Commons](#), [International and Comparative Education Commons](#), [International Public Health Commons](#), and the [Pharmacy Administration, Policy and Regulation Commons](#)

Recommended Citation

Chang, Alice C.; Miller, Monica L.; and Schellhase, Ellen M. (2017) "Expanding the Horizon: Global Health Management for Pharmacy Students," *Purdue Journal of Service-Learning and International Engagement*: Vol. 4 : Iss. 1 , Article 17.

DOI: <https://doi.org/10.5703/1288284316535>

Available at: <https://docs.lib.purdue.edu/pjsl/vol4/iss1/17>

This document has been made available through Purdue e-Pubs, a service of the Purdue University Libraries. Please contact epubs@purdue.edu for additional information.

This is an Open Access journal. This means that it uses a funding model that does not charge readers or their institutions for access. Readers may freely read, download, copy, distribute, print, search, or link to the full texts of articles. This journal is covered under the [CC BY-NC-ND license](#).



EXPANDING THE HORIZON:

Global Health Engagement for Pharmacy Students

Alice C. Chang; Monica L. Miller, PharmD;
and Ellen M. Schellhase, PharmD; *College of Pharmacy*

ABSTRACT

The advancement of global engagement opportunities will promote pharmacy students' cultural awareness and sensitivity, expose students to treatment of diseases not commonly seen in modern Western medicine, and cultivate future leadership for the growth of global pharmacy practice. At Purdue University College of Pharmacy (PUCOP), limited opportunities exist for student pharmacists. As a result, identifying the needs and expanding student pharmacist access to global engagement experiences are critical to meet the changing needs of the US population. A survey was developed and distributed to 460 students at PUCOP, and 148 of them participated. Of those students, 89.2% were interested in global health and/or international clinical rotations or an elective course coupled with an experience abroad. The majority of students were interested in going to London, UK (56.3%), whereas 24.4% were interested in traveling to Eldoret, Kenya, 13.1% to Colombia, and 6.9% to Kilimanjaro, Tanzania. The top three reasons for participation were "to explore differences in medical care outside of the US" (13.0%), "challenge myself" (12.5%), and "work in an interdisciplinary team including attending physicians, residents, and medical students" (11.5%). For students who were not interested, top reasons were "time away from family and friends" (40.0%), "scheduling conflicts" (20.0%), "safety" (20.0%), and "financial constraints" (20.0%). This article demonstrates PUCOP student pharmacists' desire for participation in global engagement opportunities and describes the potential impact on various members of the community through innovative implementations.

KEYWORDS

international pharmacy, Kenya, global health, global engagement, clinical advance pharmacy practice experience (APPE)

INTRODUCTION

According to the international migration survey conducted by the United Nations (2015), more than 14% of the US population were born in another country, an increase from 12.3% in 2000. To address the increasing globalization of US population, there is an increasing demand for all health care professional students to participate in international experiences (Steeb, Overman, Sleath, & Joyner, 2016). For example, most medical schools within the US have global educational opportunities for students; at a minimal level, student-led interest groups involving faculty and visiting scholars

are available (Drain et al., 2007; FAIMER, n.d.). The 2009–2010 Research and Global Affairs Committee report identified that at least 63% of reporting schools offered an international or global experience for students, which has been continually growing since then (Audus et al., 2010).

In addition to an increasing demand for a provision of international or global educational experiences, there is a growing body of literature that demonstrates the impact these programs have on the communities they serve. For instance, Purdue pharmacists and pharmacy students through the Academic Model Providing Access

Table 1. Demographics.

Demographic Characteristic		Value
Gender	Male	47 (26.7%)
	Female	129 (73.3%)
Age	< 20	20 (11.35%)
	21–24	143 (81.2%)
	25–30	9 (5.11%)
	> 30	4 (2.27%)
Highest Degree Obtained	Some college	139 (78.98%)
	Bachelor's degree	37 (15.34%)
	Master's degree	2 (1.14%)
	Doctorate degree	2 (1.14%)
	Others	6 (3.41%)
Professional Year	First	79 (41.48%)
	Second	51 (28.98%)
	Third	52 (29.5%)

to Healthcare (AMPATH) program have been involved in establishing diabetes clinics and providing diabetes care to the local communities in sub-Saharan Africa (Pastakia, Karwa, Kahn, & Nyabundi, 2011). Purdue University College of Pharmacy (PUCOP) provides advanced pharmacy practice experiences (APPEs) in Kenya for internal medicine, infectious diseases, and critical care services and at the Royal Hospital of St. Bartholomew in London for nuclear medicine, cardiology, and oncology services (Pastakia, Schellhase, & Jakait, 2009). The students from these experiences have expanded engagement opportunities on the ground and have demonstrated positive patient impacts; however, these experiences have a limited number of spots (48, with class sizes of about 150; Pastakia, Vincent, Manji, Kamau, & Schellhase, 2011). Over the past several years, there have been almost double the number of student applications than spots available. To address this growing interest, PUCOP developed and approved strategic initiatives for global engagement (Purdue University, n.d.). This study's aim was to identify the need for increasing PUCOP's international and global engagement opportunities for students.

METHODOLOGY

A survey was developed using Qualtrics and distributed to all PUCOP first-, second-, and third-year student pharmacists via e-mail. Data collection occurred between August 31, 2016, and September 22, 2016, and responses were anonymous. The specific locations of interest included existing programs in Kenya and the United Kingdom (UK) and potential future sites

in Colombia and Tanzania. The survey questions were classified into five categories: (1) participation interests, (2) preferences in locations, (3) reasons to participate, (4) reasons not to participate, and (5) interests toward an elective or course focusing on international pharmacy practice. The survey utilized a five-point Likert scale and allowed participants to type in their own responses to certain questions. Demographics were collected to differentiate whether students' backgrounds influenced their interests in participating in international or global pharmacy engagement experiences. Descriptive statistics were computed to analyze the results. The study was approved by the IRB at Purdue.

RESULTS

The survey was sent to 460 student pharmacists; 148 (32%) responders participated, of which 26.7% were male and 73.3% were female. The age distribution of students can be seen from Table 1. Of the student respondents, 78.0% noted having participated in a prior experience abroad.

Out of all participants, 132 (89.2%) were interested in global health and/or international clinical rotations or an elective course coupled with an experience abroad. The percentages of students interested in an elective or intensive elective course in global health, an elective course that combined an experience abroad, or an introductory pharmacy practice experience (IPPE) rotation abroad can be seen in Table 2. If students were allowed to select only one location, the majority were interested in going to London (56.3%), followed by 24.4% for Eldoret, Kenya, 13.1% for Colombia, and 6.9% for Tanzania (see Table 2). The top three reasons for participation based on response rate were "to explore differences in medical care outside of the US" (13.0%), "challenge myself" (12.5%), and "work in an interdisciplinary team including attending physicians, residents, and medical students" (11.5%). For the 16 (10.8%) students who were not interested, the top reasons were "time away from family and friends" (40.0%), "scheduling conflicts" (20.0%), "safety" (20.0%), and "financial constraints" (20.0%).

Table 2. Selected survey results.

Question	Value
I am interested in doing an international clinical rotation in (please check all that apply):	
Colombia	90 (55.56%)
Eldoret, Kenya	92 (56.79%)
Tanzania	82 (50.62%)
London, UK	136 (84.95%)

COMMUNITY IMPACT

PUCOP was the community that received direct impact from this study. The results of this survey demonstrated a demand for global rotation experiences. In response to the needs, PUCOP initiated the exploration of partnerships with key institutions in Colombia and Tanzania. The ultimate goal would be to establish APPE rotation sites in the aforementioned countries. The benefit of these sites is the opportunity to participate in a diverse selection of practice settings abroad for pharmacy students to gain clinical and research experiences. On the other hand, PUCOP has experienced some barriers. For example, further investigation is needed to examine the sustainability of new APPE sites. Protocols need to be developed to ensure and measure the quality of the rotations. Lastly, additional grant submissions are essential to securing funding for continued expansion.

Additional community members who may be impacted by the results of this survey include student pharmacists, other colleges of pharmacy, and patients. First, given the interest identified by the survey, there is a possibility to expand global health and international opportunities for student pharmacists beyond APPEs. Offering IPPE rotations during the first and/or second year of pharmacy school may be one opportunity. These early experiences could allow for engagement with international communities without the expectation for clinical skill demonstration that is required for APPEs. Additionally, the duration of an IPPE is usually four weeks, compared with the eight-week duration of APPEs, thus making them more affordable, which could enhance students' willingness to participate. For students who are not able to participate in opportunities abroad, elective courses emphasizing global health and population management may be developed. There is also potential to establish elective APPEs in collaboration with the Centers for Disease Control (CDC), United States Agency for International Development (USAID), or the World Health Organization (WHO). Through experiences with these agencies, students could learn the potential impact of a pharmacist on population health without the required international travel.

The second community impact may include pharmacy schools from different parts of the US and across the globe. Some benefits include expanding potential partnerships with the Kilimanjaro School of Pharmacy and universities in Colombia to provide a secure environment for students with concerns about safety. Additionally, currently existing programs within Kenya and the UK can be further tailored to enhance learning

about foreign health care systems and the provision of pharmaceutical care. PUCOP's strategic goals also include the development of a global innovation center for pharmaceutical research and the establishment of leadership for the growth of global engagement for the pharmacy profession, which may provide further support for expansion of student pharmacist opportunities in global engagement. With proper support from PUCOP and its faculty, student pharmacists will have more established opportunities to be involved in global health and international clinical experiences.

The final community members who can be impacted are patients. The main focus of the aforementioned interventions and developments is engaging in the care provided to patients and honing transferrable care skills. The ultimate goal is to provide more comprehensive and sustainable care to patients in various health care settings (Mitchell et al., 2012; Schellhase, Miller, Ogallo, & Pastakia, 2013). Limited health care resource settings can be found not only in developing countries, but also within industrialized countries. When partnerships are established between pharmacy schools across the US, student pharmacists can receive enhanced education on global health issues and population health outcome management from diverse and highly skilled faculty. More funding opportunities may also be available to student pharmacists to support their financial needs. When pharmacy students gain health care experience in more diverse patient populations, their cultural awareness and competency will be cultivated. Then, students can bring the innovative approaches they learned and used abroad back to benefit the underserved patient population in the United States. In return, patients with diverse cultural and religious backgrounds in the US and around the globe will receive more sustainable and appropriate health care (Thompson, Huntington, Hunt, Pinsky, & Brodie, 2003).

STUDENT IMPACT

The key motivation for me to get involved in this project was the struggle I encountered while searching for international pharmacy exchange experiences as a first-year pharmacy student. During that time, limited opportunities and education regarding global health were available. As a result, it was very exciting for me both personally and professionally to promote global engagement opportunities for future pharmacy students through this study. While working on this project, I learned to conduct a literature evaluation and design a study protocol that was distributed to all student pharmacists currently enrolled in the didactic portion of the PUCOP

curriculum. I also learned to analyze survey results and come up with proposals on how the results could impact student pharmacists, colleges of pharmacy, and patients. The skills I have acquired during this project are invaluable and fundamental for me to be successful in many kinds of research projects.

This study provided a well-rounded representation of PUCOP pharmacy students' interests and needs toward global engagement opportunities; nonetheless, there are areas for improvement. For example, I would like to initiate collaboration with other colleges of pharmacy across the country to compare and contrast the survey results. The comparison would allow the colleges to determine how geographic locations affect students' perceptions of global health. I would also redesign the survey to allow students to express permission of their personal information so that study researchers may contact specific individuals if any global health opportunities arise. Finally, I would like to survey alumni who have participated in the existing international APPEs and obtain feedback about how the programs can be improved to fit students' needs and provide a more robust training.

This project made me realize my long-term career aspirations. My goals are to create more accessible global health opportunities for pharmacy students earlier in their careers and to promote equal, sustainable, and comprehensive health care to underserved patient populations. To share my vision, I presented the study results in poster format at local and national professional meetings (Chang, Miller, & Schellhase, 2016, 2017a, 2017b). Through this whole process, I connected with faculty and pharmacy students from other colleges with similar passions. I am very grateful for the opportunities to learn from their experiences, successes, and setbacks. The professional network and skill sets I cultivated through this project will continue to strengthen my dedication to global pharmacy and population health.

CONCLUSION

This study demonstrated approximately one third of PUCOP student pharmacists' desire to participate in global engagement opportunities throughout their curriculum. In addition to expanding current partnerships in Kenya and the UK, additional opportunities for partnerships with key universities in Colombia and Tanzania have already been initiated by PUCOP. The results of this study have strong influence on various members of the communities such as PUCOP, other colleges of pharmacy across the country, and patients. Ultimately,

expansion of global engagement will promote pharmacy students' cultural sensitivity, advance their clinical knowledge, and cultivate future leadership for the growth of global pharmacy practice.

ACKNOWLEDGMENTS

I would like to thank Drs. Ellen Schellhase and Monica Miller for their time and tireless efforts invested in being my research mentors.

REFERENCES

- Audus, K. L., Moreton, J. E., Normann, S. A., Sands, C. D., III, Seaba, H. H., Wincor, M. Z., . . . Miller, K. W. (2010). Going global: The report of the 2009–2010 Research and Graduate Affairs Committee. *American Journal of Pharmacy Education*, 74(10), S8.
- Chang, A., Miller, M., & Schellhase, E. (2016). *Expansion of pharmacy students' involvement in global health and international clinical rotations*. Paper presented at the 2nd Annual Engagement and Service-Learning Summit: Partnerships for Purpose, March 10, Purdue University, West Lafayette, Indiana.
- Chang, A., Miller, M., & Schellhase, E. (2017a). *Expansion of pharmacy students' involvement in global health and international clinical rotations*. Paper presented at the 2nd Annual Engagement and Service-Learning Summit: Partnerships for Purpose, March 10, Purdue University, West Lafayette, Indiana.
- Chang, A., Miller, M., & Schellhase, E. (2017b). *Expansion of pharmacy students' involvement in global health and international clinical rotations*. Poster presented at the American College of Clinical Pharmacy Virtual Poster Symposium, May 17–18.
- Drain, P. K., Primack, A., Hunt, D., Fawzi, W. W., Holmes, K. K., & Gardner, P. (2007). Global health in medical education: a call for more training and opportunities. *Academic Medicine*, 82(3), 226–230. <https://doi.org/10.1097/ACM.0b013e3180305cf9>
- FAIMER. (n.d.). Foundation for Advancement of International Medical Education and Research Institute. Retrieved September 22, 2016, from <http://www.faimer.org/education/institute/index.html>
- Mitchell, P., Wynia, M., Golden, R., McNellis, B., Okun, S., Webb, C. E., . . . Von Kohorn, I. (2012). *Core principles and values of effective team-based health care* (Discussion paper). Washington, DC: Institute of Medicine, The National Academies. Retrieved September 22, 2016, from <https://www.nationalahec.org/pdfs/vsrt-team-based-care-principles-values.pdf>
- Pastakia, S. D., Karwa, R., Kahn, C. B., & Nyabundi, J. S. (2011). The evolution of diabetes care in the rural, resource-constrained setting western Kenya. *Annals of Pharmacotherapy*, 45(6), 721–726. <https://doi.org/10.1345/aph.1P779>
- Pastakia, S. D., Schellhase, E. M., & Jakait, B. (2009). Collaborative partnership for clinical pharmacy services in Kenya. *American Journal of Health-System Pharmacy*, 66(15), 1386–1390. <https://doi.org/10.2146/ajhp080483>
- Pastakia, S. D., Vincent, W. R., Manji, I., Kamau, E., & Schellhase, E. M. (2011). Clinical pharmacy consultations provided by American and Kenyan pharmacy students during and acute care advanced pharmacy practice experience. *American Journal of Pharmacy Education*, 75(3), Article 42. <https://doi.org/10.5688/ajpe75342>
- Purdue University. (n.d.). College of Pharmacy strategic initiatives. Retrieved March 26, 2017, from <https://www.pharmacy.purdue.edu/strategic-initiatives>
- Schellhase, E. M., Miller, M. L., Ogallo, W., & Pastakia, S. D. (2013). An elective pharmaceutical care course to prepare students for an advanced pharmacy practice experience in Kenya. *American Journal of Pharmacy Education*, 77(3), Article 60. <https://doi.org/10.5688/ajpe77360>
- Steeb, D. R., Overman, R. A., Sleath, B. L., & Joyner, P. U. (2016). Global experiential and didactic education opportunities at US colleges and schools of pharmacy. *American Journal of Pharmacy Education*, 80(1), Article 7. <https://doi.org/10.5688/ajpe8017>
- Thompson, M. J., Huntington, M. K., Hunt, D. D., Pinsky, L. E., & Brodie, J. J. (2003). Educational effects of international health electives on U.S. and Canadian medical students and residents: A literature review. *Academic Medicine*, 78(3), 342–347.
- United Nations. (2015). *International Migration 2015*. Geneva, Switzerland: United Nations, Department of Economic and Social Affairs. Retrieved July 22, 2016, from <http://www.un.org/en/development/desa/population/migration/publications/wallchart/docs/MigrationWallChart2015.pdf>

STUDENT AUTHOR BIO SKETCH

Alice C. Chang received her Doctor of Pharmacy degree from the Purdue University College of Pharmacy in May 2017. She is originally from Taiwan and received her bachelor's degree in molecular and cell biology from the University of California–Berkeley before beginning her degree program at Purdue. When she was a second-year student pharmacist, she had a summer exchange experience at the Hospital of Lithuania University of Health Sciences, Lithuania's largest medical institution, to learn about various health systems around the world. She

expanded on this international experience through her participation in the Purdue Kenya Partnership Global Health Advanced Pharmacy Practice Experience. She is passionate about health care equality and population health.

Chang, A. C., Miller, M. L., & Schellhase, E. M. (2017). Expanding the horizon: Global health engagement for pharmacy students. *Purdue Journal of Service-Learning and Engagement*, 4, 76–80. <https://doi.org/10.5703/1288284316535>